

REMARKS

Upon entry of the amendments, claims 1-17, 19, 20, and 22-25 will be pending in the above-identified application. Claims 18 and 21 have been cancelled without prejudice or disclaimer. Claim 1 has been amended. The amendment is supported throughout the specification as originally filed, including originally filed claims 18 and 21 and, as such, no new matter has been amended.

The amendment does not require a new search or consideration or change the subject matter under consideration because the amendment merely included incorporating into claim 1 the elements previously presented in dependent claims 18 and 21, which are currently canceled. The amendments do not add more claims than were finally rejected and, it is submitted, place the claims in condition for allowance, or in better condition for appeal. As such, it is respectfully requested that the amendments be entered.

Rejections Under 35 U.S.C. §102

Claims 1-25 are rejected under 35 U.S.C. §102(b) as being clearly anticipated by Chishti et al. (PCT Publication WO 98/58596 A1).

Applicants respectfully disagree that the provision of Chishti cited by the Examiner teaches each and every element of the claimed invention, including determining a piece-wise continuous curve on the surface of a three-dimensional polygonal structure, as recited in claim 1. While Chishti represents a considerable advancement in the art and generally teaches a saw tool that defines a path for cutting a graphic image by using two cubic B-spline curves lying in space, the cited reference fails to teach the specifics of the computer-implemented separation of a three-dimensional polygonal structure as set forth in claim 1 and described throughout the current specification.

Nevertheless, while Applicants respectfully disagree with the rejection and do not acquiesce to any reasoning provided by the Examiner, claim 1 has been amended to further expedite prosecution of the present case. Applicants submit that Chishti fails to teach each and every element of the presently claimed invention. In particular, in addition to the teachings of

Chishti and the presently claimed invention discussed above, Applicants submit that the cited reference fails to teach every element of the currently claimed invention, including displaying a flexible plane having a surface specified by a plurality of nodes, wherein the flexible plane surface is formed using a function applied over a two dimensional plane, adjusting one or more nodes to modify the surface of the plane, and applying the plane to the structure, as recited in current claim 1 and described throughout the specification, including, for example at Figures 5A-K and paragraphs 0059-0073.

Applicants respectfully point out that the elements of current claim 1 that have been incorporated into claim 1 by the current amendment but were previously presented in originally filed dependent claims 18 and 21. While the Examiner included claims 18 and 21 in the in the rejection over the cited reference, the dependent claims (and each of the other dependent claims) were not specifically addressed by the Examiner and no corresponding teachings have been identified in Chishti or elsewhere in the art. As such, Applicants respectfully submit that, at least for this reason, a case of *prima facie* anticipation has not been established with respect to any of the previously or currently pending claims depending from claim 1. In order to be fully responsive to the Office action, however, Applicants further point out that while Chishti teaches methods of deleting structure of a 3-D graphic representation of a patient's dentition and/or image manipulation of such 3-D digital representations, Chishti is silent with respect to the specific methods of separating a 3-D polygonal structure as recited in current claim 1 and described throughout the specification (see above). As such, Chishti fails to teach each and every element of the invention methods of current claim 1, thereby precluding a case of anticipation.

Accordingly, Applicants respectfully request that the rejections of claims 1-25 under 35 U.S.C. §102(b) be withdrawn and the claims allowed.

Claims 1-25 are rejected under 35 U.S.C. §102(e) as being clearly anticipated by Jones et al. (United States Patent No. 6,409,504).

Applicants initially submit that final rejection in this instance is premature because prior to the present Office Action the Examiner only generally cited the Jones reference and the patent number of the Jones reference without actually providing any basis for the rejection or pointing out where the elements of the claims were believed to be taught (see, e.g., 37 C.F.R. §1.104(c)). Applicants respectfully submit that making a rejection final and closing prosecution at the first instance the rejection is properly made is premature because it effectively denies the Applicants an opportunity to respond to the rejection.

Regardless of the improper finality of the rejection, Applicants respectfully submit that Jones fails to specifically teach each and every element of the currently claimed invention, thereby precluding a case of anticipation. For example, rather than separating a three-dimensional polygonal structure as recited in the current claim and described in the present application, the teachings of Jones focus on a 3D volume element representation or "voxel representation" and dentition separation using a series of 2D slices. See, e.g., paragraphs 0044-0047 of the present application for general discussion of 3D modeling of teeth as a set of polygons and techniques such as voxel representation. Furthermore, rather than teaching the three-dimensional polygonal structure separation method as recited in the current claims, the teachings of Jones focus on a 2D slice analysis that involves dividing the voxel representation of a dentition model into a series of parallel 2D planes (see, e.g., Figures 7-10; col. 9, line 9 through col. 10, line 26 of Jones).

Therefore, for at least the reasons set forth above, Applicants submit that the presently claimed invention would not be anticipated by Jones. Accordingly, Applicants respectfully request that the rejection of claims 1-25 under 35 U.S.C. §102(e) in view of Jones *et al.* be withdrawn.

HUGHES *et al.*
Application No. 10/705,391
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group 3732

PATENT

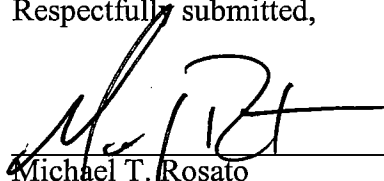
CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-467-9600.

Respectfully submitted,

Dated: 1/11/2007



Michael T. Rosato
Reg. No. 52,182

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 206-467-9600
Fax: 415-576-0300
MTR:jae/jms
60900320 v1